AMENDMENTS TO THE CLAIMS

1	1.	(Currently Amended) A method of generating a communication frequency	
2	based on a mo	dulo 23 solution for an input variable, comprising:	
3	receiving an input variable;		
4	genera	ting an intermediate modulo 23 solution by:	
5		generating a binary representation of said input variable;	
6		using the five rightmost digits of said binary representation of said input variable	
7		to represent a first intermediate remainder (R');	
8		using the remaining three leftmost digits to represent a first intermediate quotient	
9		(Q');	
0		expressing said first intermediate modulo solution as a sum of said first	
1		intermediate quotient (Q') multiplied by 9 plus said first intermediate	
2		remainder (R'); and	
3		comparing said first intermediate modulo solution to the quantity 32;	
4	indicat	ing said first intermediate remainder (R') modulo solution as the modulo	
5		remainder (R) if said quantity of said first intermediate modulo solution is less	
6		than 32 <u>23;</u> and	
7	using s	said modulo remainder to generate said communication frequency.	
1	2.	(Currently Amended) The method according to claim 1 wherein an iterative	
2	process is perf	formed if said first intermediate modulo solution is greater than 32, said iterative	
3	process compr	ising:	
4	(a)	generating a binary representation of said first intermediate modulo solution;	
5	(b)	using the five rightmost digits of said binary representation of said first	
6		intermediate modulo solution to represent a second intermediate remainder (R")	
7	(c)	using said remaining three leftmost digits to represent a second intermediate	
8		quotient (Q");	

9	(d)	expressing said second intermediate modulo solution as a sum of said second
10		intermediate quotient (Q") multiplied by 9 plus said second intermediate
11		remainder (R");
12	(e)	comparing said second intermediate modulo solution to the quantity 32;
13	(f)	indicating said second intermediate remainder (R") modulo solution as the
14		modulo remainder (R) if said quantity of said second intermediate modulo
15		solution is less than 32 23; and
16	(g)	repeating steps (a) through (f) if said intermediate modulo solution is greater
17		than 32 and continuing until the intermediate modulo solution is less than 32.
1	3.	(Original) The method according to claim 1, wherein said multiplication of
2	said first inter	mediate quotient (Q') by 9 is accomplished by:
3	shiftin	g said binary representation of Q' to the left by three places; and
4	adding	said left-shifted value of Q' to the original value of Q'.
1	4.	(Original) The method according to claim 2, wherein said multiplication of
2	said second in	termediate quotient (Q") by 9 is accomplished by:
3	shiftin	g said binary representation of Q" to the left by three places; and
4	adding	said left-shifted value of Q" to the original value of Q".
1	5.	(Currently Amended) A method of generating a modulo 79 solution for an input
2	variable, comp	orising:
3	receivi	ing an input variable;
4	genera	ting an intermediate modulo 79 solution by:
5		generating a binary representation of said input variable;
6		using the seven rightmost digits of said binary representation of said input
7		variable to represent a first intermediate remainder (R');
8		using the remaining leftmost digits to represent a first intermediate quotient (Q');

10		intermediate quotient (Q') multiplied by 49 plus said first intermediate
11		remainder (R'); and
12		comparing said first intermediate modulo solution to the quantity 128;
13	indica	ting said first intermediate remainder (R') modulo solution as the modulo
14		remainder (R) if said quantity of said first intermediate modulo solution is less
15		than 128 <u>79</u> ; and
16	using	said modulo remainder to generate said communication frequency.
1	6.	(Currently Amended) The method according to claim 5 wherein an iterative
2		formed if said first intermediate modulo solution is greater than 128, said iterative
3	process comp	rising:
4	(a)	generating a binary representation of said first intermediate modulo solution;
5	(b)	using the seven rightmost digits of said binary representation of said first
6		intermediate modulo solution to represent a second intermediate remainder (R") $$
7	(c)	using said remaining leftmost digits to represent a second intermediate quotient
8		(Q");
9	(d)	expressing said second intermediate modulo solution as a sum of said second
10		intermediate quotient (Q") multiplied by 49 plus said second intermediate
11		remainder (R");
12	(e)	comparing said second intermediate modulo solution to the quantity 128;
13	(f)	indicating said second intermediate remainder (R") modulo solution as the
14		modulo remainder (R) if said quantity of said second intermediate modulo
15		solution is less than 128 79; and
16	(g)	repeating steps (a) through (f) if said intermediate modulo solution is greater
17		than 128 and continuing until the intermediate modulo solution is less than 128.
1	7.	(Original) The method according to claim 5, wherein said multiplication of
2	said first inter	mediate quotient (Q') by 49 is accomplished by:
3	shiftir	g said binary representation of Q' to the left by 5 places to define a first shifted Q'
4		value,

expressing said first intermediate modulo solution as a sum of said first

5	shifting said binary representation of Q' to the left by 4 places to define a second shifted
6	Q' value; and
7	adding said first and second shifted values of Q' to the original value of Q'.
1	8. (Currently Amended) The method according to claim 6, wherein said
2	multiplication of said second intermediate quotient (Q") by [[9]] $\underline{49}$ is accomplished by:
3	shifting said binary representation of [[Q']] Q" to the left by 5 places to define a first
4	shifted [[Q']] Q" value,
5	shifting said binary representation of [[Q']] Q" to the left by 4 places to define a second
6	shifted [[Q']] Q" value; and
7	adding said first and second shifted values of [[Q']] Q" to the original value of [[Q']]
8	<u>Q"</u> .
1	9. (Currently Amended) A system for generating a communication signal at a
2	predetermined frequency, comprising:
3	a transceiver, said transceiver comprising:
4	a radio frequency module;
5	a baseband core further comprising a frequency control functionality;
6	a frequency hopper within said baseband core of said transceiver, said frequency hopper
7	being operable to generate a plurality of frequencies related to a modulo 23 solution of an input
8	variable, wherein said frequency hopper generates an intermediate modulo 23 solution by:
9	generating a binary representation of said input variable;
0	using the five rightmost digits of said binary representation of said input
1	variable_to represent a first intermediate remainder (R');
2	using the remaining three leftmost digits to represent a first intermediate quotient
3	(Q');
4	expressing said first intermediate modulo solution as a sum of said first
15	intermediate quotient (Q') multiplied by 9 plus said first intermediate
6	remainder (R');
17	comparing said first intermediate modulo solution to the quantity 32; and

10		indicating said first intermediate remainder (K-) modulo solution as the modulo
19		remainder (R) if said quantity of said first intermediate modulo solution
20		is less than 32 <u>23</u> .
1		10. (Currently Amended) The method system according to claim 9 wherein
2	an iterative pr	cess is performed if said first intermediate modulo solution is greater than 32,
3	said iterative j	ocess comprising:
4	(a)	generating a binary representation of said first intermediate modulo solution;
5	(b)	using the five rightmost digits of said binary representation of said first
6		intermediate modulo solution to represent a second intermediate remainder (R")
7	(c)	using said remaining three leftmost digits to represent a second intermediate
8		quotient (Q");
9	(d)	expressing said second intermediate modulo solution as a sum of said second
10		intermediate quotient (Q") multiplied by 9 plus said second intermediate
11		remainder (R");
12	(e)	comparing said second intermediate modulo solution to the quantity 32;
13	(f)	indicating said second intermediate remainder (R") modulo solution as the
14		modulo remainder (R) if said quantity of said second intermediate modulo
15		solution is less than 32 23; and
16	(g)	repeating steps (a) through (f) if said intermediate modulo solution is greater
17		than 32 and continuing until the intermediate modulo solution is less than 32.
1	11.	(Currently Amended) The method system according to claim 9, wherein said
2	multiplication	of said first intermediate quotient (Q') by 9 is accomplished by:
3	shiftin	said binary representation of Q' to the left by three places; and
4	adding	said left-shifted value of Q' to the original value of Q'.
	10	
1	12.	(Currently Amended) The method system according to claim 10, wherein said
2	-	of said second intermediate quotient (Q") by 9 is accomplished by:
3	shiftin	said binary representation of Q" to the left by three places; and

adding said left-shifted value of Q" to the original value of Q".

(Currently Amended) A system for generating a communication signal at a

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predetermined frequency, comprising:

3	a trans	sceiver, said transceiver comprising:
4	a radi	o frequency module;
5	a base	band core further comprising a frequency control functionality;
6	a freq	uency hopper within said baseband core of said transceiver, said frequency hopper
7		being operable to generate a plurality of frequencies related to a modulo 79
8		solution of an input variable, wherein said frequency hopper generates an
9		intermediate modulo 79 solution by:
10		generating a binary representation of said input variable;
11		using the seven rightmost digits of said binary representation of said input
12		variable to represent a first intermediate remainder (R');
13		using the remaining leftmost digits to represent a first intermediate quotient (Q');
14		expressing said first intermediate modulo solution as a sum of said first
15		intermediate quotient (Q') multiplied by 49 plus said first intermediate
16		remainder (R');
17		comparing said first intermediate modulo solution to the quantity 128; and
18		indicating said first intermediate $\overline{\text{remainder}\left(R'\right)}\underline{\text{modulo solution}}$ as the modulo
19		remainder (R) if said quantity of said first intermediate modulo solution
20		is less than 128 <u>79</u> .
1	14.	(Currently Amended) The method system according to claim 13 wherein an
2	iterative proce	ess is performed if said first intermediate modulo solution is greater than 128, said
3	iterative proce	ess comprising:
4	(a)	generating a binary representation of said first intermediate modulo solution;
5	(b)	using the seven rightmost digits of said binary representation of said first
6		intermediate modulo solution to represent a second intermediate remainder (R")
7	(c)	using said remaining leftmost digits to represent a second intermediate quotient
8		(Q");
		7

11		remainder (R");
12	(e)	comparing said second intermediate modulo solution to the quantity 128;
13	(f)	indicating said second intermediate remainder (R') modulo solution as the
14		modulo remainder (R) if said quantity of said second intermediate modulo
15		solution is less than 428 79; and
16	(g)	repeating steps (a) through (f) if said intermediate modulo solution is greater
17		than 128 and continuing until the intermediate modulo solution is less than 128 .
1	15.	(Currently Amended) The method system according to claim 13, wherein said
2	multiplication	of said first intermediate quotient (Q') by 49 is accomplished by:
3	shiftin	g said binary representation of Q' to the left by 5 places to define a first shifted Q'
4		value,
5	shiftin	g said binary representation of Q' to the left by 4 places to define a second shifted
6		Q' value; and
7	adding	said first and second shifted values of Q ' to the original value of Q '.
1	16.	(Currently Amended) The method system according to claim 14, wherein said
2	multiplication	of said second intermediate quotient (Q") by 9 is accomplished by:
3	shiftin	g said binary representation of Q' to the left by 5 places to define a first shifted Q' value,
5	-1.101	· ·
6	smiun	g said binary representation of Q' to the left by 4 places to define a second shifted Q' value; and
7	. 440	
/	adding	g said first and second shifted values of Q ' to the original value of Q '.
1	17.	(Currently Amended) A system for generating communication frequencies in a
2	wireless interf	ace system that services communications between a wirelessly enabled host and at
3	least one user	input device, comprising:

expressing said second intermediate modulo solution as a sum of said second

intermediate quotient (Q") multiplied by 49 plus said second intermediate

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(d)

4	a wireless interface unit that wirelessly interfaces with the wirelessly enabled host,
5	wherein the wireless interface unit comprises:
6	an analog module including a transceiver unit and a frequency synthesizer,
7	a baseband module including a frequency hopper, wherein said frequency
8	hopper is operable to generate a plurality of frequencies related to a
9	modulo 23 solution of an input variable, wherein said frequency hopper
10	generates an intermediate modulo 23 solution by:
11	generating a binary representation of said input variable;
12	using the five rightmost digits of said binary representation of said input
13	variable to represent a first intermediate remainder (R');
14	using the remaining three leftmost digits to represent a first intermediate
15	quotient (Q');
16	expressing said first intermediate modulo solution as a sum of said first
17	intermediate quotient (Q') multiplied by 9 plus said first
18	intermediate remainder (R');
19	comparing said first intermediate modulo solution to the quantity 32; and
20	indicating said first intermediate remainder (R') modulo solution as the
21	modulo remainder (R) if said quantity of said first intermediate
22	modulo solution is less than 32 23; and
23	wherein said frequency synthesizer is operable to generate a frequency
24	hop sequence using said result of said modulo 23 solution
25	generated by said frequency hopper.
1	18. (Currently Amended) The system according to claim 17 wherein an iterative

process is performed if said first intermediate modulo solution is greater than 32, said iterative process comprising:

- (a) generating a binary representation of said first intermediate modulo solution;
- $(b) \qquad \text{using the five rightmost digits of said binary representation of said first} \\ \text{intermediate modulo solution to represent a second intermediate remainder } (R")$
- using said remaining three leftmost digits to represent a second intermediate quotient (Q");

10		intermediate quotient (Q") multiplied by 9 plus said second intermediate
11		remainder (R");
12	(e)	comparing said second intermediate modulo solution to the quantity 32;
13	(f)	indicating said second intermediate remainder (R') modulo solution as the
14		modulo remainder (R) if said quantity of said second intermediate modulo
15		solution is less than 32 23; and
16	(g)	repeating steps (a) through (f) if said intermediate modulo solution is greater
17		than 32 and continuing until the intermediate modulo solution is less than 32.
1	19.	(Currently Amended) The method system according to claim 17, wherein said
2	multiplication	n of said first intermediate quotient (Q') by 9 is accomplished by:
3	shiftir	ng said binary representation of Q' to the left by three places; and
4	addin	g said left-shifted value of Q' to the original value of Q'.
1	20.	(Currently Amended) The method system according to claim 18, wherein said
2	multiplication	n of said second intermediate quotient (Q") by 9 is accomplished by:
3	shiftir	ng said binary representation of Q" to the left by three places; and
4	addin	g said left-shifted value of Q" to the original value of Q".
1	21.	(Currently Amended) A system for generating communication frequencies in a
2	wireless inter	face system that services communications between a wirelessly enabled host and at
3	least one user	input device, comprising:
4	a wire	cless interface unit that wirelessly interfaces with the wirelessly enabled host,
5		wherein the wireless interface unit comprises:
6		an analog module including a transceiver unit and a frequency synthesizer,
7		a baseband module including a frequency hopper, wherein said frequency
8		hopper is operable to generate a plurality of frequencies related to a
9		modulo 79 solution of an input variable, wherein said frequency hopper
10		generates an intermediate modulo 79 solution by:

(d) expressing said second intermediate modulo solution as a sum of said second

11		generating a binary representation of said input variable;
12		using the seven rightmost digits of said binary representation of said input
13		variable to represent a first intermediate remainder (R');
14		using the remaining leftmost digits to represent a first intermediate quotient (Q');
15		expressing said first intermediate modulo solution as a sum of said first
16		intermediate quotient (Q') multiplied by 49 plus said first intermediate
17		remainder (R');
18		comparing said first intermediate modulo solution to the quantity 128; and
19		indicating said first intermediate remainder (R2) modulo solution as the modulo
20		remainder (R) if said quantity of said first intermediate modulo solution
21		is less than 128 <u>79</u> .
1	22.	(Currently Amended) The system according to claim 21 wherein an iterative
2	process is per	formed if said first intermediate modulo solution is greater than 128, said iterative
3	process comp	orising:
4	(a)	generating a binary representation of said first intermediate modulo solution;
5	(b)	using the seven rightmost digits of said binary representation of said first
6		intermediate modulo solution to represent a second intermediate remainder (R")
7	(c)	using said remaining leftmost digits to represent a second intermediate quotient
8		(Q");
9	(d)	expressing said second intermediate modulo solution as a sum of said second
10		intermediate quotient (Q") multiplied by 49 plus said second intermediate
11		remainder (R");
12	(e)	comparing said second intermediate modulo solution to the quantity 128;
13	(f)	indicating said second intermediate remainder (R") modulo solution as the
14		modulo remainder (R) if said quantity of said second intermediate modulo
15		solution is less than 128 79; and
16	(g)	repeating steps (a) through (f) if said intermediate modulo solution is greater
17		than 128 and continuing until the intermediate modulo solution is less than 128.

l	23. (Original) The system according to claim 22, wherein said multiplication of
2	said first intermediate quotient (Q') by 49 is accomplished by:
3	shifting said binary representation of Q' to the left by 5 places to define a first shifted Q'
ļ	value,
5	shifting said binary representation of Q' to the left by 4 places to define a second shifted
5	Q' value; and
7	adding said first and second shifted values of Q' to the original value of Q'.
1	24. (Currently Amended) The system according to claim [[14]] 23, wherein said
2	multiplication of said second intermediate quotient (Q") by 9 is accomplished by:
3	shifting said binary representation of Q' to the left by 5 places to define a first shifted Q'
4	value,
5	shifting said binary representation of Q' to the left by 4 places to define a second shifted
6	Q' value; and
7	adding said first and second shifted values of Q' to the original value of Q'.